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INTERLOCKING WARP AND WEFT IN THE NASCA 2 STYLE

Ann Pollard Rowe

The textiles made on the south coast of Peru in Epoch 2 of the Early Intermediate Period achieved a complexity, in both technique and design, rarely equalled and never surpassed in Peruvian antiquity. These textiles form part of the Paracas-Nasca stylistic tradition, the earlier part of which is named for a group of sites on the Paracas Peninsula, the later part, for the valley of Nasca. The distinction between a "Paracas" and a "Nasca" stylistic unit in the common tradition has recently been clarified for textiles (Dwyer, 1971) as well as for pottery (Menzel, Rowe and Dawson, 1964). The phase of the Paracas-Nasca tradition which corresponds to Epoch 2 of the Early Intermediate Period, and indeed serves to define it, is designated Nasca 2. The most recent radiocarbon measurements suggest that the absolute dates of this epoch are about 300 to 200 B.C. (Rowe, 1967).

It is perhaps of some significance that two of the textile techniques which have excited the most wonder and admiration in modern students and which are unique to Peru, namely the three-dimensional development of the cross-knit loop stitch *(needleknitting)* and interlocking warp and weft, were brought to their fullest development in the Nasca 2 phase. The former technique has received considerable attention, mainly in relation to the small ceremonial cloth now in the Brooklyn Museum whose border is composed of extremely elaborate three-dimensional figures executed in this stitch (Leviller, 1928; O'Neale, 1934; Tello, 1959; Harcourt, 1962, pls. 88-104). Another outstanding example of the technique is the cloth, now in the Ethnographic Museum in Göteborg, Sweden, that is made entirely in three-dimensional embroidery (Harcourt, 1948; Lothrop, 1964, pp. 197-9).

Interlocking warp and weft of this period has curiously not received the same attention, perhaps because its immediate visual effect is more straightforward, and perhaps because fewer examples are known. The only one that has been written about, and that only very recently (Easby, 1966), is a piece in the Brooklyn Museum, (Fig. 3). The Museum of Fine Arts, Boston, also possesses an example (Figs. 1, 2, 5), of which only a photograph has so far been published (*The Museum Year;* 1967, p. 76). Although the Boston textile is more fragmentary than the Brooklyn one, it is equally interesting and spectacular and deserves to be brought to wider attention.[1]

Technical Description

While far less of the Boston textile has been preserved, it may have been similar in its proportions to the one in Brooklyn. The full-loom width of the Boston piece, at 1.145m, is somewhat wider than the Brooklyn piece at .74m, excluding fringe. The present length of the Brooklyn textile

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[1] I would like to thank Larry Salmon, Curator of Textiles at the Museum of Fine Arts, Boston, for his support and encouragement, and Michael Kan, Curator of Primitive Art and New World Cultures at the Brooklyn Museum for making available the Brooklyn piece for direct examination.

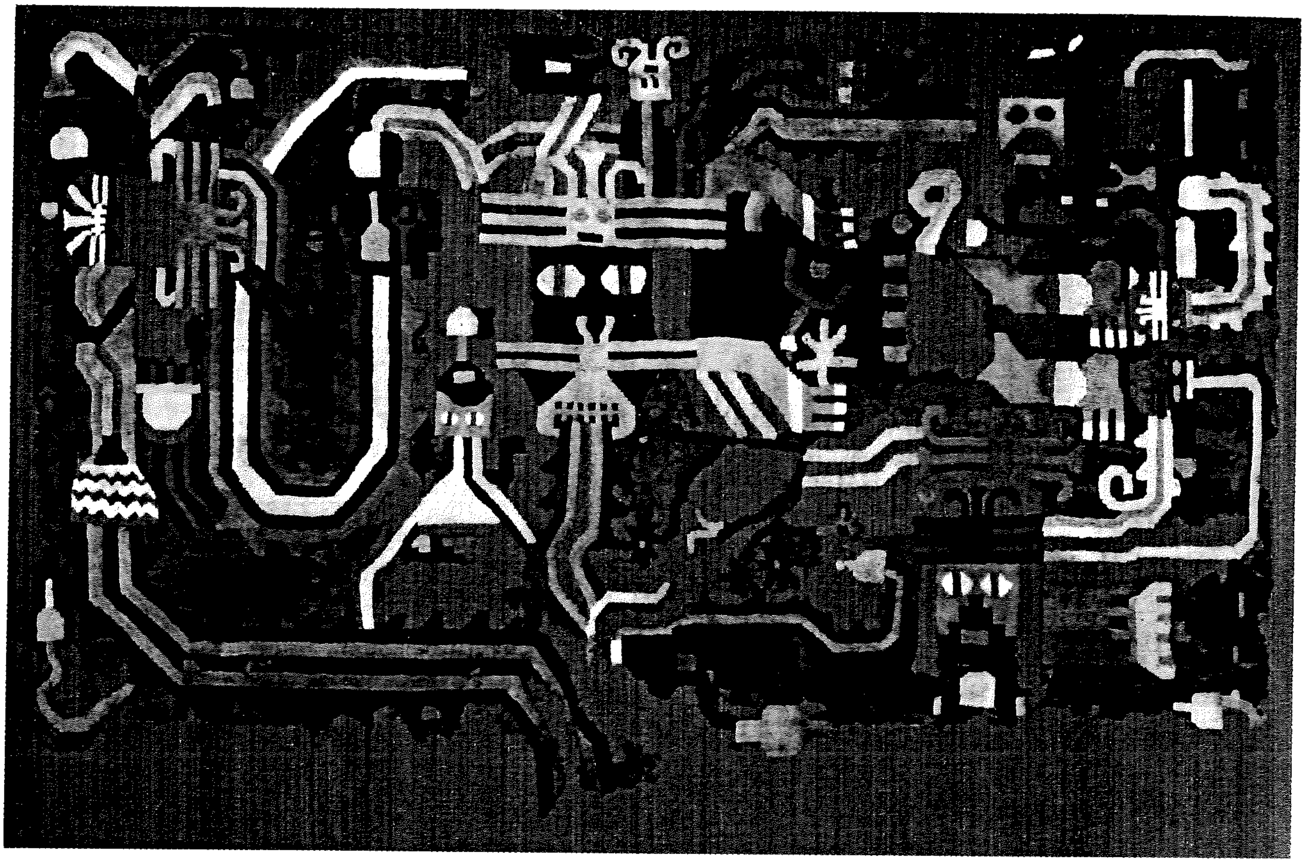

Fig. 1 Fragment of a textile in interlocking warp and weft technique with an elaborate Nasca 2 style design. *Height:* .70 m; *Width, selvedge to selvedge:* 1.145 m. Courtesy of the Museum of Fine Arts, Boston, Edwin E. Jack Fund. 67.313a.

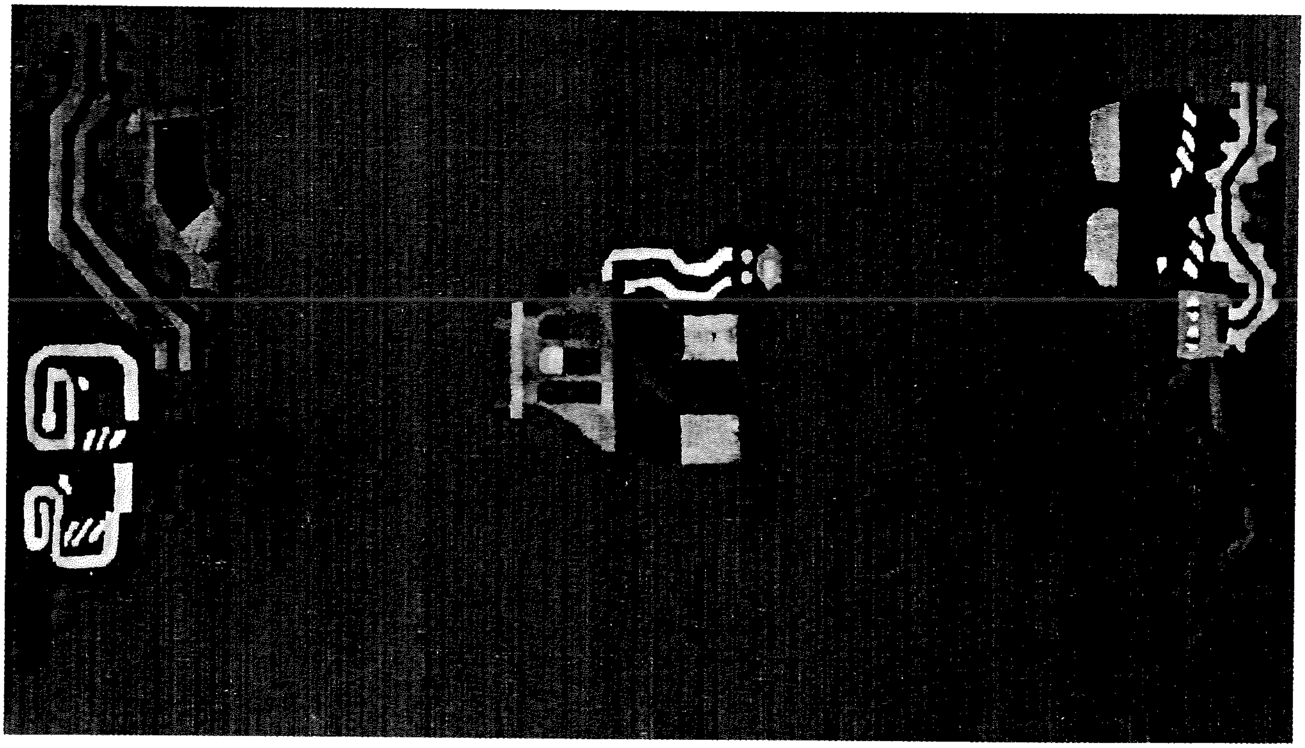

Fig. 2 Further fragments of the same textile as Fig. 1, photographed at the same scale. *Height of left fragment:* .58 m; *Width:* .19m; *Height of center fragment:* .215 m; *Width:* .29 m; *Height of right fragment:* .46 m; *Width:* .185 m. Courtesy of the Museum of Fine Arts, Boston, Edwin E. Jack Fund. 67.313b-d.

is 1.86m. To judge from the size of the serpentine appendage and headdress of the fragmentary figure at the lower end, however, the piece must have once been long enough to include at least one more figure comparable in size to the other three. Assuming that this figure is the only one missing, the complete length of the Brooklyn textile may be extrapolated to 2.39m. The maximum length of the largest fragment of the Boston textile is .70m. Of the three smaller fragments of this textile, two have side selvedges and none appear to be connected in design. That the largest surviving complete figure is not the main figure of the piece is suggested by the presence of the large serpentine appendage with an elaborate bird terminal at the left of Fig. 1. This appendage is larger than those of the surviving complete figure and would have belonged to a figure of correspondingly greater size. Also, the two pairs of feet preserved in the two smaller fragments with selvedges are both larger and more elaborate than those of the complete figure and would have belonged to two larger figures. The skirt and legs of the center small fragment do not appear to fit either of the two sets of feet and may belong to yet a fourth large figure, perhaps about the size of the complete one. Thus, it is very possible that the layout of the Boston textile was similar to the Brooklyn piece with two large figures in the center and a slightly smaller one at each end.

The neck slit and shoulder fringe on the Brooklyn piece indicate that it was used as a tunic. However, there are several other features of the textile which are hard to explain in a tunic. Most other Paracas-Nasca tunics are of considerably smaller size and when worn (folded) are wider than they are long (Carrión Cachot, 1931, pp. 80-81; O'Neale, 1937, p. 183). A longer tunic is depicted on some embroidered figures, however, and may have had restricted (possibly ceremonial) use. The neck slit, while it is located between the two central figures, cuts across appendages of each. Also, while it is in the middle of what has been preserved, it would not be centered on the textile if the lower figure is restored. In addition, all of the figures were designed to be seen from a single direction. Consequently, if the textile were worn as a tunic, half of the figures would hang upside down. Paracas-Nasca garments are usually designed with motifs that regularly reverse direction. The band around the neck, and the fringe and side trim of the Brooklyn "tunic" were embroidered on after the weaving, and are worked in a purplish color not found in the weaving. For all these reasons, it would be most logical to infer that the Brooklyn textile were not woven as a tunic but converted to this use later by removing a piece from one end and cutting a neck slit. Easby (1966, p. 69) states that the neck slit is woven in rather than cut, however. In view of the other evidence, the neck slit should probably be reexamined. The Boston textile is too fragmentary to shed any light on the matter.

The unidirectional orientation of the figures on the Brooklyn textile suggests that it, and probably the Boston piece as well, may have been used for wall hangings rather than garments. Very possibly they may have served some

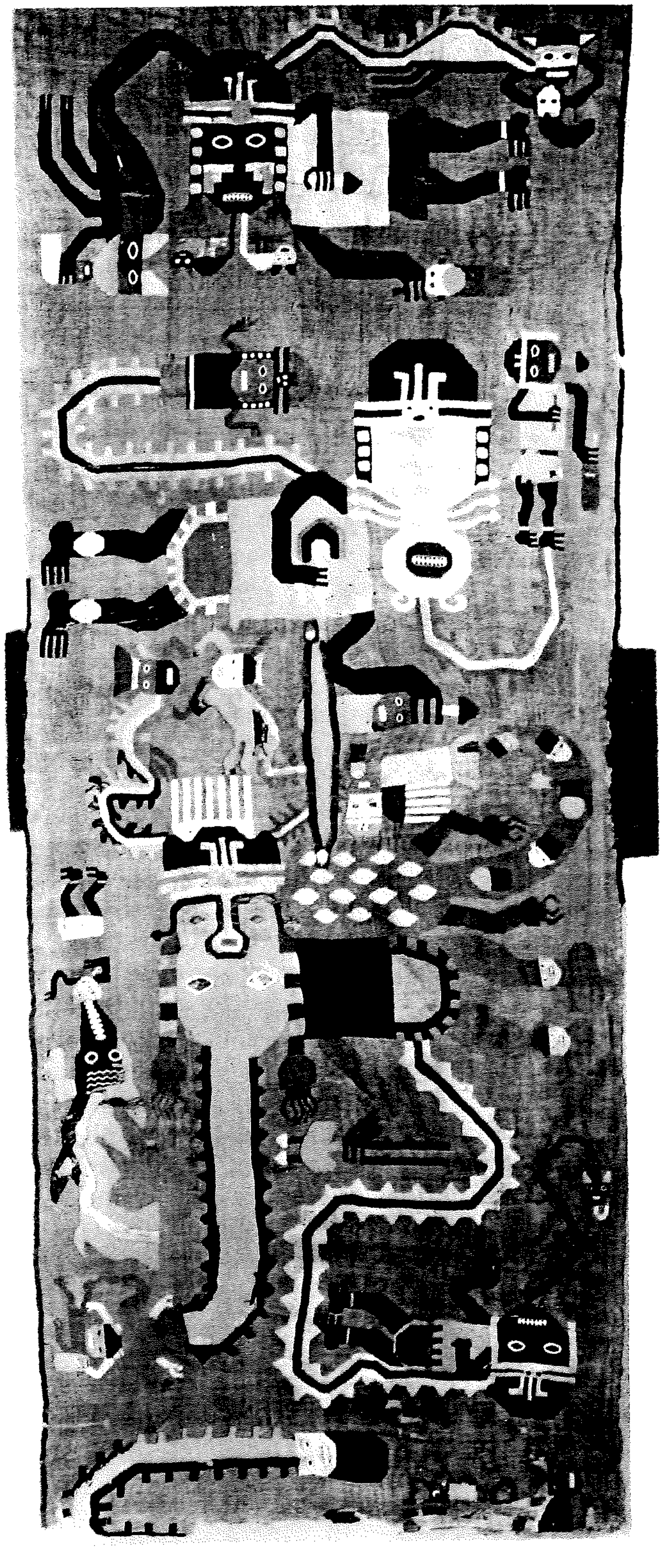

Fig. 3 Tunic, similar in technique and date to the Boston Museum fragments. *Height:* 1.86 m; *Width, selvedge to selvedge:* .74 m. Courtesy of the Brooklyn Museum, Alfred W. Jenkins Fund. 34.1579.

ceremonial purpose, as has been suggested for another group of cloths, identical on both sides and of unusual and elaborate technique (Bird and Bellinger, 1954, pp. 51-52); this group includes the cross-knit loop stitched fabrics referred to above (see also Fig. 8).

The yarns are similar in the two textiles. Both are made of two-ply S-plied wool yarns like the yarns commonly used for the embroideries. The yarns of the Boston textile are relatively tightly plied (45-60 degrees), while more loosely spun (Z, 15-30 degrees). They are .3-.4 mm in diameter, and there are 12-15 per cm in both the warp and weft direction. A thread count of the Brooklyn textile kindly provided by B. Appelbaum of the Brooklyn Museum Conservation Department gives 12 warp and 15 weft yarns per cm.

The upper edge of the largest fragment of the Boston textile is an end selvedge, with three heavier weft yarns which must have functioned as heading cords. They were made by twisting together two of the yarns used for the main weft (thus re-plied Z) and are .7-.8 mm in diameter. The side selvedges do not appear to have been treated in any special way.

In color, both textiles show the variety, richness and subtlety characteristic of the period, without doubt the high point in the entire history of Peruvian dyes. The colors of the two pieces could not be compared exactly, but a few observations were obvious. Both textiles employ a red ground, though that of the Brooklyn textile appears brighter and more orange in comparison to the darker and more purplish cast of the Boston piece. The range of colors used in the design figures is similar again, fourteen in each piece, but not exactly the same. It includes natural creamy white, two shades of brown, pale orange, three shades of yellow, two of green, a medium shade of blue, a dull lavender and black. This list is a minimum one. I have tried not to include variations in color which appear to be the result of different dye lots but which are used in the same color area. In addition to the above colors, the Brooklyn textile has a pink which is almost completely rotted out; it was used in such places as the body of the figure with the mouth mask, the face and the center of the serpentine appendage of the lowest full figure with the cat skin headdress, the body of the lowest full figure appendage terminal and the center of the serpentine appendage of the lowest figure which is mostly missing. Gray is also found in the Brooklyn piece. In the Boston textile two colors are formed by spinning together fibers of different colors: there is a yellow combined with gray and a red combined with white. The latter was apparently used instead of pink. Two-color yarns are a distinctive Nasca 2 feature (Dwyer, 1971, pp. 194-195). Many of the rotted areas of the Boston textile appear to have been brown (two different shades), but there are several other colors which are preserved in some places and gone in others, such as the red ground and black. The black is also partially rotted in the Brooklyn piece, a common occurrence in textiles all over the world due to the extensive use of an iron mordant with this dye color.

Interlocking Warp and Weft

The term "interlocking warp and weft" used of the Nasca 2 textiles here under discussion is descriptive of a particular variant of the technique for which the most useful term is "discontinuous warp and weft" (Harcourt, 1962, pp. 17-21). In cloths made in this technique the warp and weft are discontinuous in the sense that they do not travel from selvedge to selvedge, but go back and forth only over a particular color area. The principle involved is like tapestry, except that, since both warp and weft change color at the edge of each section of the design, they may both be equally visible, and a fabric of very light and sheer texture may be produced. Most of the different joins found in tapestry are also used in discontinuous warp and weft, chief among them, dovetailing and single interlock. In addition, double interlock is sometimes used—most notably in the earlier phases of the Paracas-Nasca tradition (see below)—although this join is rare in Peruvian tapestry. Slits are, of course, only feasible when putting in the weft, or second set of elements, since the warp, or first set of elements, must be attached to something to hold it in position. All the joins in both the Boston and Brooklyn textiles are single interlock.

While the effect achieved by a discontinuous warp and weft technique is straightforward enough in a finished textile, the process by which this effect was achieved is difficult to account for. In most cases, it appears that scaffold weft yarns were used at the points where the warp yarns turn. That such a framework was actually used is proved partly by the existence of such scaffold yarns in discontinuous

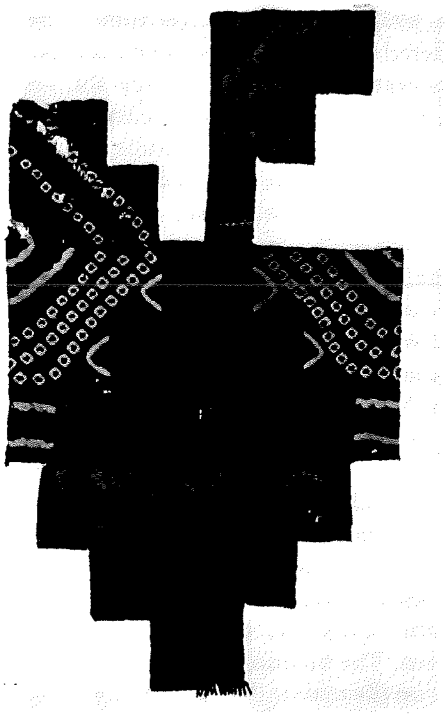

Fig. 4 Fragment of a textile woven with the warp yarns dovetailing around a scaffold weft and tie-dyed after weaving. *Height:* .68 m; *Width:* .39 m. Courtesy of the Museum of Fine Arts, Boston, Samuel Putnam Avery Fund, 52.479.

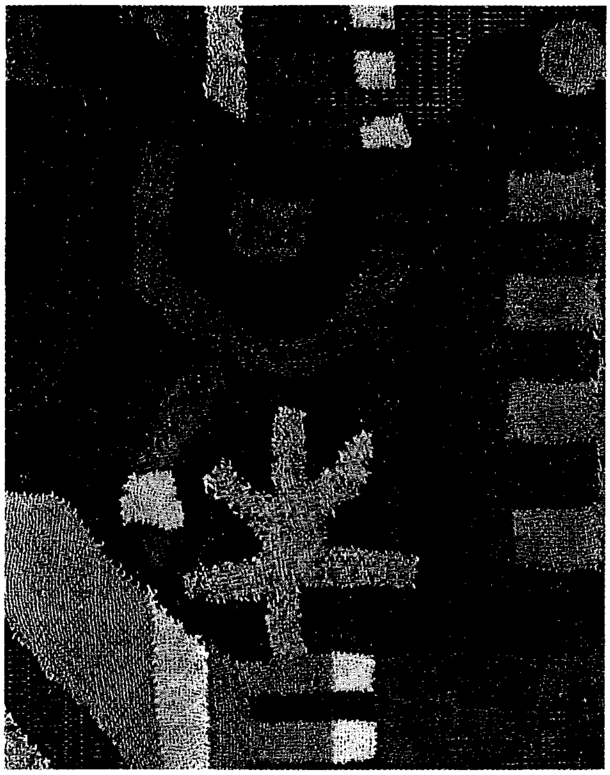

Fig. 5 Detail of Boston textile (Fig. 1) showing interlocking warp and weft yarns in curves and diagonals. *Height of the area shown:* .19m; *Width:* .15m.

warp and weft textiles whose warp yarns dovetail around this scaffold weft rather than interlock with each other (see Fig. 4). In these textiles, the scaffold yarns must remain a part of the fabric, since without them all the sections of color would come apart, a property exploited in the Middle Horizon tie-dyed, dovetailed-warp fabrics like Fig. 4.

That scaffold weft yarns were used in discontinuous warp and weft textiles with interlocking warp is strikingly demonstrated by the unfinished textile in the American Museum of Natural History, published by Harcourt (1962, pl. 5). This piece, of Late Intermediate Period date, has scaffold weft yarns at the points of color change, while the main weft yarns have not been inserted.

The use of scaffold weft yarns is a plausible explanation for the process of making discontinuous warp and weft textiles that have only horizontal and vertical design elements in modular widths, so that these wefts need only be used at spaced intervals. The use of scaffold warp yarns, in addition to scaffold weft, has also been suggested (O'Neale, 1930, p. 40, Fig. 9, pl. 6a), and is a possibility, but in the piece diagrammed by O'Neale and similar cases the design could have been produced using scaffold weft yarns alone, though a scaffold warp would probably have simplified the process.

The main unsolved problem with scaffold weft yarns is the question of how they were held taut during the warping process. No archaeological evidence is available to provide an explanation, but the most reasonable suggestion is that the yarns were secured to a rigid frame that could have been removed after all the interlocking had been completed. Even so, great care would be needed to avoid pulling the isolated scaffold yarns out of position while they were being wound with the warp.

The use of diagonal and curved lines and a completely irregular design in the Nasca 2 textiles here under consideration presents an entirely new set of technical problems that would have had to have been overcome (Fig. 5). Since the design changes at virtually every level, scaffold yarns would be needed in equal number to main weft yarns. With so many scaffold yarns it would appear to have been advisable to pass each warp yarn around only one of the scaffold wefts at each end of the pattern area so that it could travel above rather than around below the intervening scaffold yarns. This procedure would be necessary to facilitate the removal of the scaffold yarns after all of the interlocking had taken place. There are other problems however. The scaffold weft yarns would be so close together and would each support so small a proportion of the warp yarns, that they could very easily be pulled out of alignment with each other during the warping process. Further, the layer of scaffold weft yarns would be so dense that the use of scaffold warp yarns would compound the difficulty rather than solve it. The use of scaffold weft yarns for so complicated a design is, however, at least theoretically possible.

Nevertheless, an examination of the Boston textile suggests that there may have been an alternative. Although the yarns are extremely brittle and securely sewn down to a modern fabric thus making it difficult to see clearly exactly where each yarn turns from warp to weft or vice versa, it appears, from observing the yarns in areas where two different dye lots were used, that each section of the weaving may have been completed, with both warp and weft, as the work proceeded, and that in some areas the weft may have been inserted before the warp, thus necessitating scaffold warp yarns as well as weft. The process would have been greatly simplified if these foundation yarns were woven together into a cloth before the interlocking warp and weft textile was begun. This scaffold cloth would also have to have been stretched taut on a frame, but to do so would be as easy or easier than stretching weft only. The warp and weft of the scaffold cloth could be used in the same manner as unwoven scaffold warp and weft, and the woven structure of the cloth would hold the scaffold yarns in position much more firmly than parallel yarns in one or both directions and thus provide a much more secure foundation for complex darning. The use of a needle to work all of the interlocking yarns would be necessary, whether a woven foundation were used or not. Heading cords and loom bars would still be useful to keep the ends of the warp straight and even. Further, it would be a relatively simple matter to mark the complex design to be executed on the foundation fabric, whereas marking on unwoven yarns would be awkward. After the interlocked textile had been completed, the foundation could be removed by unraveling its yarns, perhaps supplemented by judicious cutting. Of course, one cannot assume that Paracas-Nasca artists necessarily did things the easiest way, but the use of a foundation cloth is logical on other grounds as well. For example, an interesting possible precedent for darning on cloth is the method of adding color to Nasca 1A triple cloth bands (see Bird and Bellinger, 1954, Fig. 2, p. 98), which is similar in principle to that proposed here.

Further, it is obvious that the use of a scaffold cloth instead of yarns alone makes the interlocking warp and weft technique closer in process to embroidery (darning) than to weaving, and a transformation of weaving into embroidery would fit very well into the Paracas-Nasca textile tradition, since virtually all fancy Nasca 2 textiles are decorated by embroidery or some other surface technique such as painting or warp wrapping. There was, moreover, a good deal of experimentation with embroidery techniques at this time, especially in the ceremonial cloths which tended to be relatively sheer and have double-faced embroidered patterning, whether double-faced stem stitch, double running stitch (as Fig. 9) or the three-dimensional development of the cross-knit loop stitch, which is perhaps the most spectacular variety of double-faced embroidery. The wrapped warp technique (Conklin, 1971) is also sheer and identical on both sides. Interlocking warp and weft with single interlock is, of course, both sheer and double-faced to a degree unparalleled in any other polychrome weaving technique.

A glance at the antecedents of these Nasca 2 interlocking warp and weft textiles will help to put them in perspective. The earliest example of the technique known so far is the Paracas 9 tunic in the Textile Museum (T.M.1959.11.1, Easby, 1966, p. 73). Another early example, in the Paracas 10B style, is a mantle in the Soldi Collection from Ocucaje mentioned by King (1965, p. 152) with a simple bird pattern (Fig. 6). Both of these examples however employ only vertical and horizontal color changes, and the interlocking in both directions is double rather than single like the Nasca 2 pieces.

The earliest examples to employ diagonals and curves appear in Nasca 1, but the double interlock join continued to be used. An extraordinary example of this technique is a small fragment in the Museum of the American Indian in New York (Figs. 7-8).[2] The fragment is unfortunately so minute that one cannot read the design, except for the serpentine appendage. However, the lank, open volutes look Nasca 1 in style, and there is a Nasca 1 jar in the R. H. Lowie Museum of Anthropology in Berkeley with a design of mythical serpents and fish on it that is very reminiscent of the figures on the textile.[3]

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[2] I would like to express my gratitude to Anna C. Roosevelt, Curatorial Assistant at the Museum of the American Indian, Heye Foundation, for drawing this piece to my attention and for making it available to me for study.

[3] This style analysis was kindly provided by Lawrence E. Dawson of the Lowie Museum. The jar is catalog number 16-10475 and is from Cahuachi in the Nasca Valley, Wattis Collection.

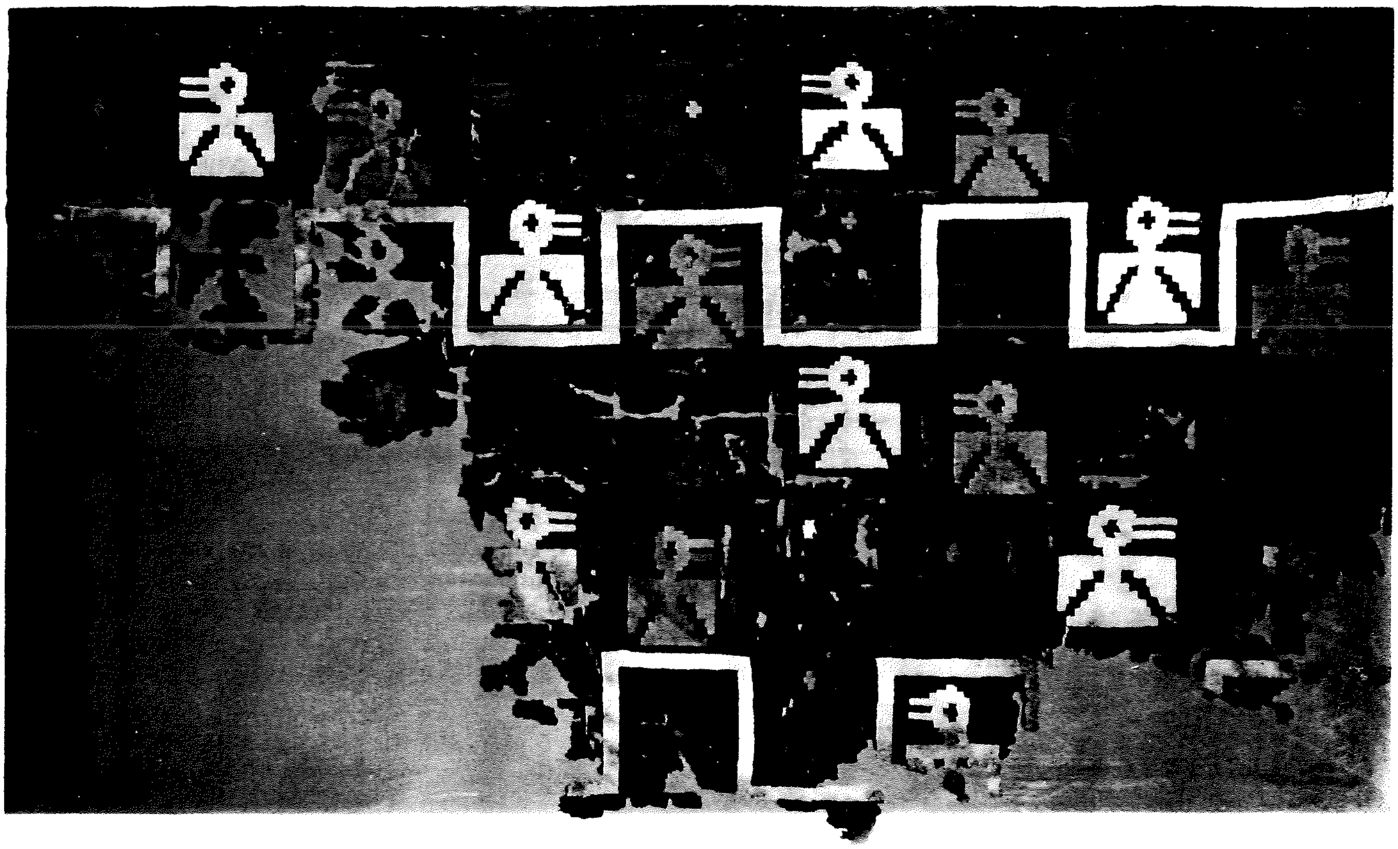

Fig. 6 Fragment of a mantle in the Paracas 10B style. The field is interlocking warp and weft with double interlock and the border is embroidered. From Ocucaje in the Ica valley. *Height:* .675 m; *Width:* 1.965 m. T.M.91.869.

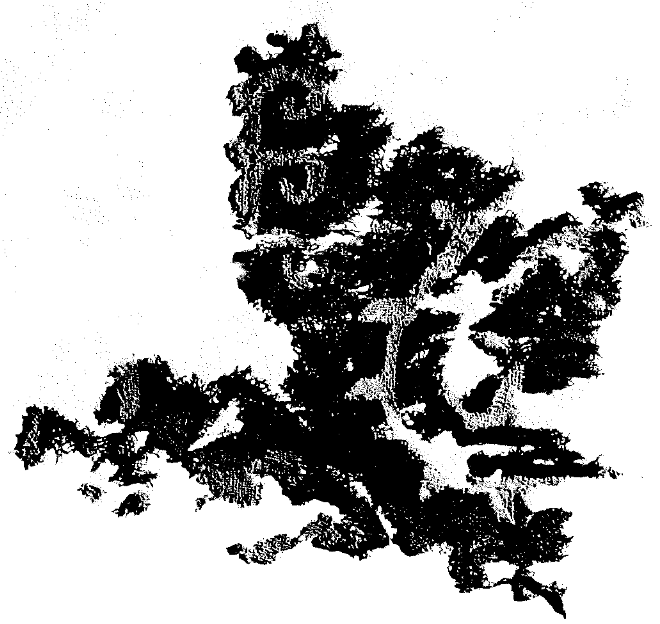

Fig. 7 Fragment of a Nasca 1 textile in interlocking warp and weft technique with double interlock. *Height:* .14 m; *Width:* .15 m. Courtesy of the Museum of the American Indian, Heye Foundation. 14/4137.

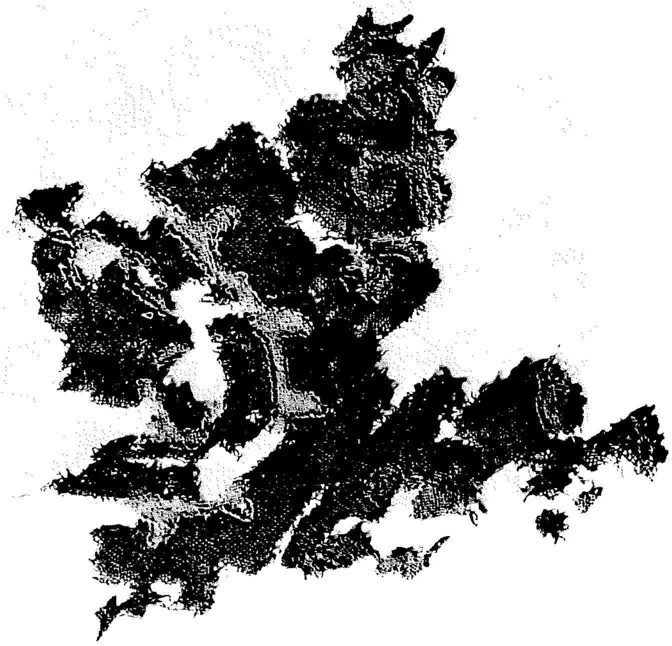

Fig. 8 Back of the same textile as Fig. 6 showing the double interlock.

Technically, it is the finest example of interlocking warp and weft known. The smallest units of design, the eyes in the small curved appendages, are barely 1 by 2 mm (about 2 by 4 yarns), and the diagonals and curves are skillfully and freely used. The yarns are similar to those found in the embroideries and in the Nasca 2 interlocking warp and weft textiles, being 2-ply, S-plied, Z-spun and .3-.4 mm in diameter. The yarn count ranges from 14-17 per cm in the direction parallel to the serpentine appendage to 12-14 per cm in the opposite direction. It is impossible to determine with certainty which is the warp and which is the weft direction. The colors are very rich as well. The background color is a strong purple, and the colors used in the pattern areas include a bright salmon pink, purplish red, olive green and a dark bluish green. A further example of an interlocking warp and weft textile with diagonals and curves and with double interlock, in the Nasca 1 style, in this case Nasca 1A, is in the Musée de l'Homme in Paris.[4]

It thus appears that the development of a system for producing both smooth diagonals and curves in the interlocking warp and weft technique occurred in Nasca 1A to accommodate the increasing interest in the comparatively naturalistic depiction of animal and human forms which is a characteristic feature of this phase of Paracas-Nasca textile design. In particular, the use of curves appears for the first time in this phase in embroidery (Dwyer, 1971, p. 129). In addition, the preeminence of embroidery as the technique for textile embellishment which had begun in Paracas 10 became even more sharply accentuated in Nasca 1A (Dwyer, 1971, pp. 136-137), other techniques being chiefly relegated to narrow bands. It is thus possible that the use of a cloth scaffold would have originated at the same time, as the Nasca 1A triple cloth band with darning, already cited, might also suggest.

The change from double to single interlock is evidently to be viewed in a slightly different context. In Nasca 1, interlocking warp and weft was also used for patterning the ground cloth of embroidered textiles (Dwyer, 1971, p. 137). The only published example is a mantle in the Museo Nacional de Antropolgiá y Arqueologiá in Lima (no. 378-8, Carrión Cachot, 1931, pl. 1a; Sawyer, 1968, p. 53, no. 373), which has an embroidered border in the Nasca 1B style (Dwyer, 1971, p. 233a). The center portion of the mantle has an interlocking warp and weft design, in this case a simple one of step blocks, and the joins are single interlocked. The single interlock therefore seems to be a Nasca 1B innovation. Whether it was adopted from technical or visual considerations is not certain. Visually, single interlock, while giving a slightly less precise division of color than the front face of double interlock, has the advantage of giving the same appearance on both the front and back of the fabric, while double interlock is definitely one sided (Figs. 7-8). In view of the interest in double-faced fabrics which is so clear in Nasca 2, it may be that this feature was a consideration in the change. Technically, either join is possible whether working with scaffold yarns or cloth, although little enough is known of the actual processes so that technical considerations cannot be ruled out entirely.

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[4] Dr. Henry Reichlen of the Musée de l'Homme generously provided me with a photograph of this textile (registration no. 48.7.7) for study purposes. As he plans to publish the piece himself, nothing further need be said about it here, but I have taken it into account in my general statements.

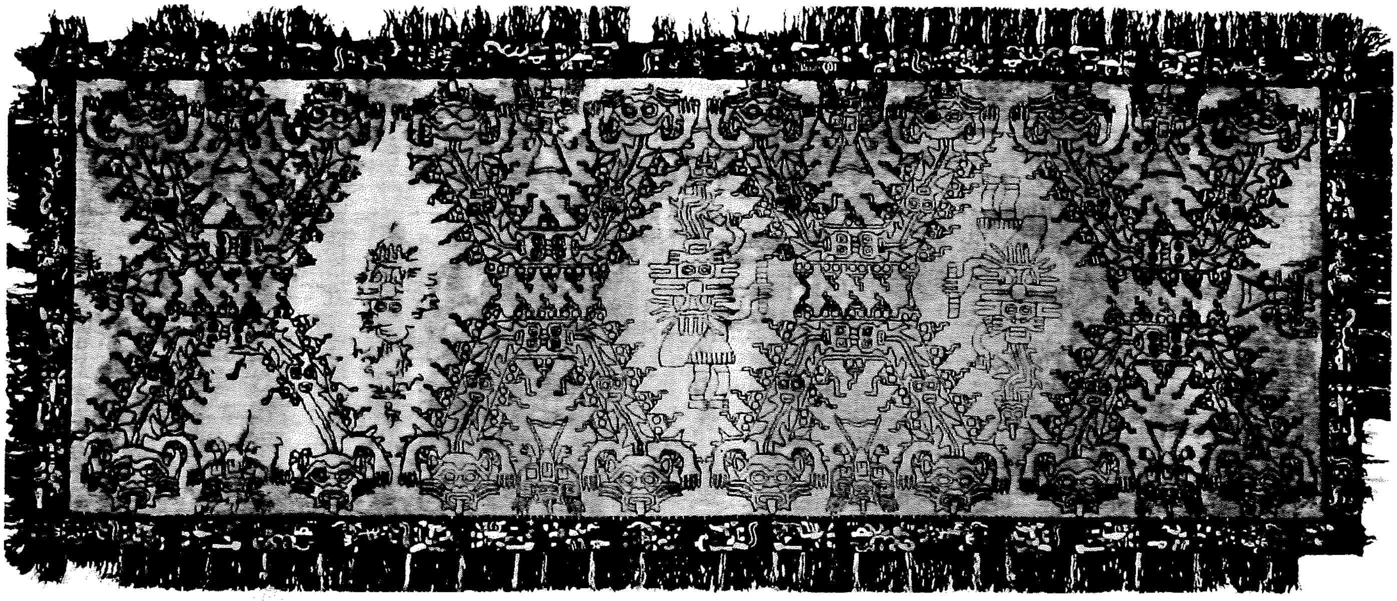

Fig. 9 Ceremonial cloth decorated in double-faced embroidery. The field is embroidered in double running stitch and the border in double-faced stem stitch. *Height:* 1.22 m; *Width:* .51 m. T.M.91.205.

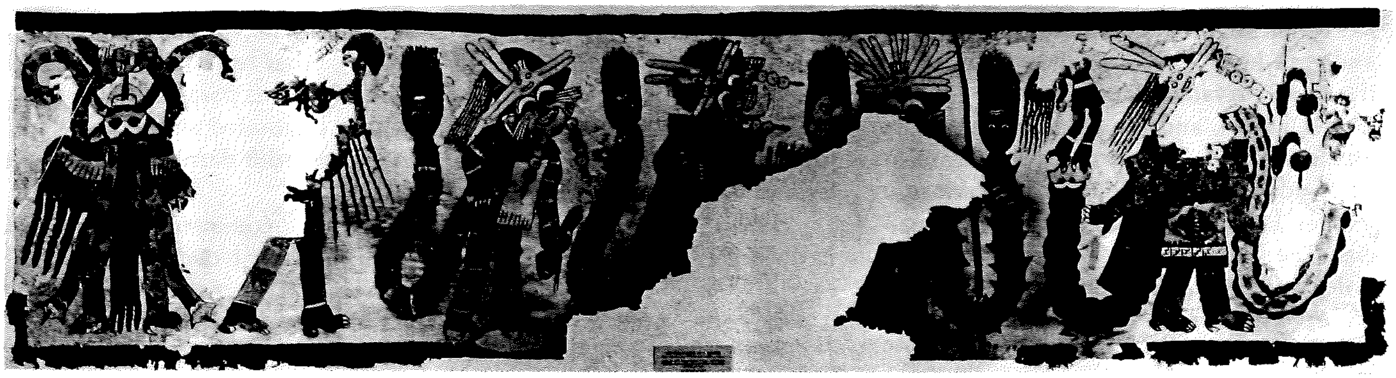

Fig. 10 Nasca 2 style painted textile, perhaps also a ceremonial cloth. *Height:* .685 m; *Width:* 2.54 m. Courtesy of the Cleveland Museum of Art, Gift of Mrs. R. Henry Norweb, 40.530.

Style and Iconography

The layout of the design in the Boston and Brooklyn textiles is unusual for Paracas-Nasca textiles and is apparently conditioned by the limitations of the technique used. It would be prohibitively difficult to produce figures in darning that were as small as those in the embroidered borders, especially if the figures are as complex as Nasca 2 figures usually are. Thus, each figure takes up the whole width of the cloth. The closest parallels to such a large-scale design are found in the Textile Museum's small ceremonial cloth with the double running stitch center field design (Fig. 9) and in the well-known painted cloth in the Cleveland Museum (Fig. 10). Another unusual feature is that each of the figures is different from the rest, whereas in the vast majority of the embroidered textiles, a single figure is repeated many times. This feature, while an innovation in Nasca 2 and not very common even there, appears in the unusual ceremonial cloths previously mentioned and in the Cleveland painted cloth. In spite of the use of the whole width of the cloth for different figures, the design is in no way scenic; the figures are arranged in a row and do not appear to interact, a composition entirely in keeping with other aspects of the Paracas-Nasca textile tradition. There may, of course, have been a mythological or iconographic relationship among the figures of which the designer and users of the cloth were well aware but which cannot be determined now.

Small details of the design, such as facial features, are embroidered in stem stitch on the figures of the Brooklyn cloth. In the Boston textile, the larger faces have their features worked in the interlocking warp and weft technique. Only the smaller faces, such as the trophy heads (for example on the ankles of the large figure), serpent head appendage terminals, and forehead ornaments, are blank and were probably intended to be embroidered on, although no trace of such work now remains, either due to decay or perhaps because the textile was never finished.

The exact provenance of the interlocking warp and weft textiles is not known. In style they are similar to the embroidered textiles found by J. C. Tello at various sites on the Paracas peninsula, most notably the Necropolis of Cerro Colorado. Fragmentary textiles, related in style to those of Paracas, have, however, also been found in the Nasca and Ica valleys to the south. The quantity and quality of these finds is in no way comparable to the wealth of material from Paracas, but this circumstance is as likely to have been the result of the accidents of preservation and discovery as a true reflection of ancient conditions. These textiles have, however, not been analyzed in sufficient detail in print to make it possible to deduce regional stylistic peculiarities and preferences, which would in turn make possible the attribution of undocumented textiles. The designs of the interlocking warp and weft textiles will be considered in relation to what is known of the Nasca 2 style as it is found in the embroideries from Paracas, but there are some unusual features, and these may be due to differing provenance.

Mythical beings of human form, in a standing or flying pose and with serpentine appendages and frequently also with bird, killer whale or feline features are the main design themes in Paracas embroidery in the Nasca 2 style (for example, Figs. 9-12 in addition to the interlocking warp the weft textiles).[5] They wear knee-length tunics or waist-length tunics with skirt or loincloth, as well as jewelry, such as mouth masks, forehead ornaments, hair dangles (discs attached to the hair on either side of the face) and spondylus shell necklaces. They may carry such objects as trophy heads, fans, batons, knives, darts, jewelry or plants.

In general, Nasca 2 figure design is characterized by its complexity and elaboration of detail in comparison with Nasca 1B, but the presence of any of a variety of specific details is the basis on which a phase attribution is actually made. The figures in the interlocking warp and weft textiles (especially in the Brooklyn piece) are not as complex or as composite as Nasca 2 figure designs often become, perhaps as a result of technical limitations; some, though by no means all, of the details are strikingly conservative as well (as noted below). This conservatism is in contrast to the other ceremonial cloths mentioned above. It does not, however, detract from the very real achievements of the weavers of the interlocking warp and weft textiles.

Hands and feet are among the clearest indicators of stylistic change in the Paracas-Nasca tradition. In Nasca 1, the hands merely touch or overlap the objects held, and there is little contouring (see for example, Bird and Bellinger, 1954, pls. LI and LII), while in Nasca 2 the hands are frequently depicted with thumbs and clearly grasp the object held (Figs. 10,11). The difficulties of the technique may be what has prevented the depiction of thumbs and a clear grasp in these two textiles, with the possible exception of a thumb-like finger on the upper figure of the Brooklyn piece. A two-handed grasp was also used, for example, in the upper right feline in the Brooklyn textile and the lower right figure in the Boston textile. This two-handed grasp appears in Nasca 1 (compare Bird and Bellinger, 1954, pl. LII), but the hands curving around the head instead of just touching with the fingertips is a Nasca 2 feature (for example, see the figure on the far left in Fig. 10). Feet with arches and protruding heels are a Nasca 1 form which is also carried over into Nasca 2 (see Bird and Bellinger, 1954, pl. XLVII for the Nasca 1 form, and Figs. 1, 3 and 9 for Nasca 2 examples). Most of the feet shown in the interlocking warp and weft textiles are of this type. The bird-like feet, with hanging claws and one opposing digit which are used on bird and feline figures, including those in the interlocking warp and weft textiles, are also carried over from Nasca 1 (see Bird and Bellinger, 1954, pl. LXXIX center). The Nasca 2 innovation in feet is the addition of a thumb-like toe which curves under the heel (see Figs. 10-12). The only appearance of this type of foot in the interlocking warp and weft textiles is in the small fragment on the left in the Boston textile (Fig. 2).

Legs and arms also exhibit conservative features in the interlocking warp and weft textiles. In Nasca 2 designs, in keeping with the relative elaboration of this phase, the figures are often depicted with shoulder decoration on their tunics, usually a fringe and sometimes an embroidered

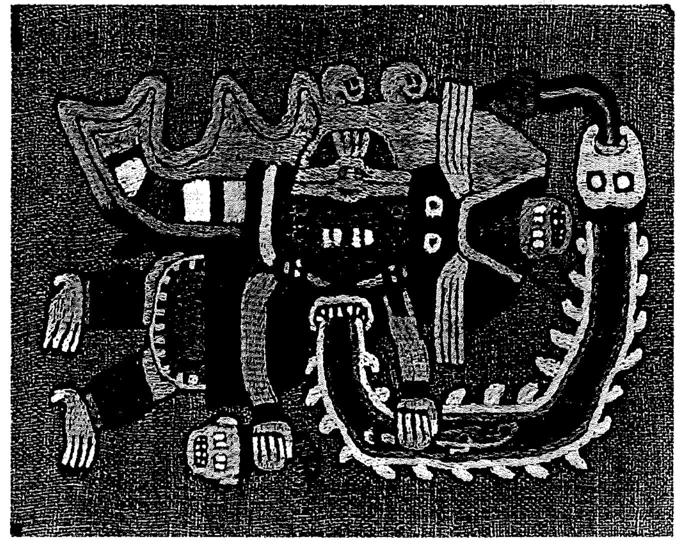

Fig. 11 Detail of a Nasca 2 embroidered mantle from Paracas showing a mythical being with killer whale features. *Height of the figure:* .13 m; *Width:* .20 m. Courtesy of the Museum of Fine Arts, Boston, Ross Collection. 16.31.

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[5] The following discussion is based on the seriation of Paracas-Nasca textile designs initially worked out by Lawrence E. Dawson of the R.H. Lowie Museum of Anthropology, University of California, Berkeley, and subsequently elaborated and described by Dwyer, 1971. In addition to extensive use of the Dwyer dissertation, I have also benefited greatly from discussions with Dawson regarding interlocking warp and weft textiles.

band as well (see Fig. 12). Both interlocking warp and weft textiles lack this feature (as also Fig. 11). Further, Nasca 1B figures often have relatively long and naturalistically depicted legs with a definite knee joint and a thickening at the thigh (see Bird and Bellinger, 1954, pls. XLIX and LXII), while Nasca 2 figures tend to have relatively short legs of rectangular shape, without much contouring (see Figs. 11 and 12). The legs of the figures on the interlocking warp and weft textiles, especially those of the Brooklyn piece, are closer to the 1B type. In this case the use of a more conservative feature cannot be attributed to the technique, since the Nasca 2 leg would be easier to execute.

There are specifically Nasca 2 details of the Boston textile in addition to the foot with the toe curving under the heel. These include wide bands of color on the legs as seen in the central small fragment (as in Fig. 11), the double-pronged stick pin seen in the headdress of both the large figure and the bird figure (compare Fig. 10) and the depiction of the forehead ornament on places other than the forehead, here as a serpentine appendage terminal (compare Fig. 12). In addition, plant forms may be used in the design and are frequently shown carried by mythical figures, as is the plant with root, stalk and flowers, which is carried by the larger figure on the Boston textile (compare Fig. 12).

Of the figures in the Brooklyn textile, the largest, not surprisingly, has the most complex iconography. He wears a complete cat skin headdress (compare Fig. 12 and Sawyer, 1968, p. 57). The eyes and nose of the cat are seen above the face of the figure, and the ears appear above the forehead ornament. The front legs of the cat hang down on either side of the figure's face, while the spotted body, hind legs and tail, which is filled with trophy heads (a Nasca 2 feature), and which ends in a bird terminal, are clearly seen on the back of the figure.

At the end of the serpentine appendage emerging from the mouth of the main figure is a bird-man with a human victim. This figure is sometimes depicted alone in Nasca 2 (for example, Fig. 10) and becomes important in Nasca 3 ceramic designs as the "head taster demon" (Dwyer, 1971, p. 207; Proulx, 1968, p. 18 and pl. 6). The killer whale to the left of the main figure is comparatively naturalistically depicted. His mythical features here are a human arm and a human victim (compare Fig. 11). Both human victims are shown held in the same way as trophy heads.

The apparently confused composition of the Boston textile will perhaps become more clear if it is compared in detail to that of the Brooklyn piece. The largest complete figure, in the upper right-hand section of the Boston textile is similar in many respects to the second figure from the top in the Brooklyn piece. Both figures wear short tunics and loincloths, as well as the forehead ornaments, mouth masks and hair dangles (now rotted out on the Boston piece). Both figures have human appendage terminals and carry fans. In each case the fans overlap the body. Extensive overlapping is common in Nasca 2 but here is not carried any further than in Nasca 1. Both have trophy heads depicted on their ankles (the hair and faces of which are now rotted out on the Boston textile). The occurrence of trophy heads on ankles is a very good clue for phase attribution, as it is a feature which appears only in Nasca 2 (compare Sawyer, 1968, p. 57 and Tello, 1959, pls. XXVIII-XXXIII, XXXV-XL), and with all the other similarities helps to indicate that the two textiles are very nearly contemporary.

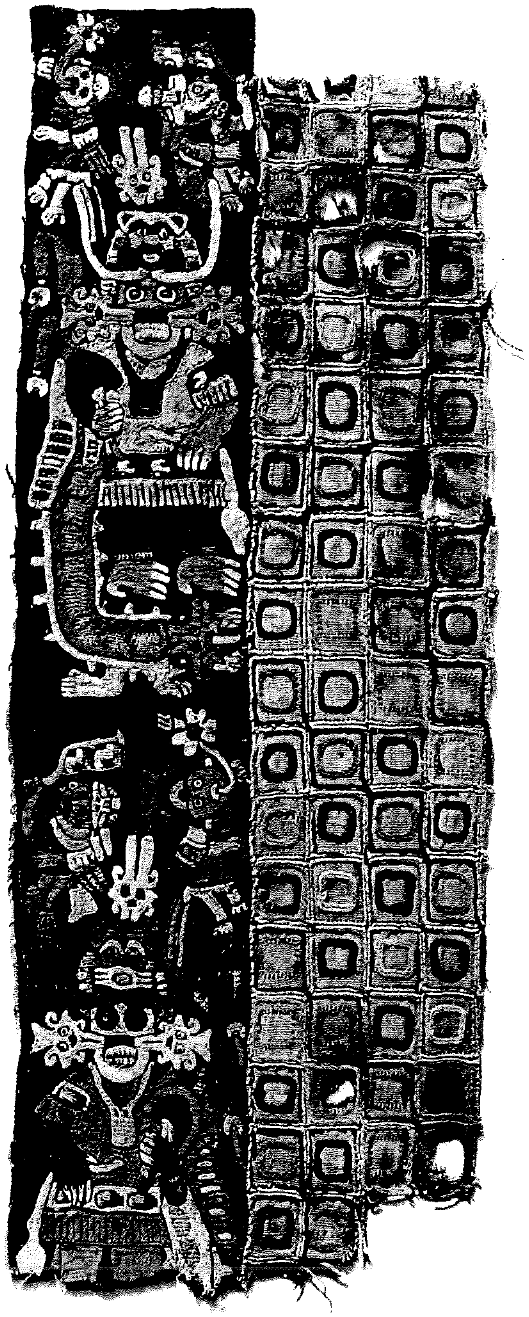

Fig. 12 Fragment of a cloth embroidered in the Nasca 2 style. The border figure is wearing a cat skin headdress (the tail of which appears below the arm at left) and carries a fan and a jiquima tuber. One of the small figures attached to the headdress is carrying a bean pod, and the other has a flower. *Height:* .395 m; *Width:* .15 m. T.M. 91.213.

Another figure comparable in the two textiles is the bird appendage terminal with human head and arms which is attached to the larger figures seen at the left on the largest fragment of the Boston textile and at the end of the cat's tail on the Brooklyn textile. In addition, the figure at the top of the Brooklyn piece, with short tunic and skirt, ankle bands, stepped triangle patterning around the mouth, forehead ornament and slightly flaring hair locks under the dangles, with feline appendage terminals and carrying a trophy head is similar in all of these details to the figure seen in the lower right corner of the largest fragment of the Boston textile.

In spite of the above similarities, however, the compositions and details of the two textiles reveal striking differences in the designer's approach. Such differences are especially interesting in this case, because they appear to reveal individual rather than temporal pecularities and show the extent to which variation was possible at a given moment. The designer of the Brooklyn textile appears to have been the more disciplined and skilled artist, and the designer of the Boston piece, more bold and innovative.

In the composition of the Brooklyn textile, the artist has isolated the figures on the background so that they appear distinct and logical. The simple line-up of the figures is more similar to the embroideries, even though the figures are large and differ from one another. In the Boston textile, on the other hand, the designer has endeavored to fill every inch of space, partly by the size and placement of the figures and partly by the multiplication of serpentine appendages. The attachment of serpentine appendages to each other with the result that the major figures are all interconnected has no parallel in embroidery. Specific examples of unusual serpentine connections include the triangular figure at center left of the large fragment, which is attached to serpentine appendages from two different large figures and the two serpentine appendages from the forehead ornament of the lower right-hand figure which are connected in a circular movement to the small feline. Also unusual, are serpentine fillers such as the serpentine appendage extending from the chest of the largest surviving figure which ends in a forehead ornament and the small serpent head appendage extending from the large serpentine in the lower left corner.

Another difference lies in the greater subtlety in curves and widths found in the Brooklyn textile. An obvious point of comparison would be the mouth masks of the large figures in each textile: the one on the Boston figure is composed almost entirely of straight lines, while in the Brooklyn textile the whiskers of the mask curve upward and are relatively thin compared to the thick portion around the mouth. In addition, the arms and legs of the figures on the Brooklyn textile are more contoured and of more naturalistic shape than those on the Boston piece.

There are also, of course, differences in the choice of specific forms used for various features. One obvious example is the type of eye used. Those of the Brooklyn textile have dark centers the shape of the eye itself and are outlined in white, while those on the Boston piece have band pupils. Band eye pupils are a distinctive Nasca 2 feature (compare Fig. 11), but are not used to the exclusion of the other type. Another variation is in the forehead ornaments, which in the Boston textile have three prongs on each side and on the Brooklyn piece, only two, even on the largest figures. Similarly, the hands and feet on the Boston textile are depicted with fingernails and toenails, while the artist of the Brooklyn textile omits this detail. The differences in the color range, already noted, may be added to this list.

Again, in the Boston textile, many of the serpentine appendages end in feline or serpent heads with protruding tongues and also sometimes curling whiskers, but on the Brooklyn textile, most of the appendage terminals are full figures holding trophy heads. Many of these trophy heads are of a conservative type, with the hair depicted hanging from the chin, and in many cases the head is held by a cord at the top. Nasca 2 trophy heads are more often depicted held by hanks of hair which grow from the top of the head, as is the one held by the feline in the upper left corner (compare Figs. 9, 10). On the other hand, the trophy head terminal of the lowermost serpentine appendage has arched eyebrows, a Nasca 2 feature (compare Fig. 10).

That it is possible to infer at least partially the significance of such stylistic differences attests both to the extreme vitality of the Nasca 2 textile tradition and to the wealth of material which the desert sands have preserved until modern times. Nevertheless, the interlocking warp and weft technique as it was developed in these two textiles, with irregular designs suggesting the use of a scaffold cloth, seems never to have been repeated in subsequent styles of Peruvian weaving. The Nasca 3 interlocking warp and weft textiles which have been recorded (O'Neale, 1937), as well as those of later styles, are of the simpler type. Moreover, recorded Nasca 3 textiles in general do not approach those of Nasca 2 in complexity of design. Nevertheless, the design tradition does not continue into subsequent phases of the Early Intermediate Period but primarily in the polychrome slip-painted ceramics of the Nasca Valley (see Proulx, 1968).

References Cited

Bird, Junius B. and Bellinger, Louisa
1954 *Paracas Fabrics and Nazca Needlework.* Catalogue Raisonné, Washington, D.C.: The Textile Museum.

Carrión Cachot, Rebeca
1931 "La indumentaria en la antigua cultura de Paracas." *Wira Kocha*, vol. 1, no. 1:37-86.

Conklin, William J
1971 "Chavin Textiles and the Origins of Peruvian Weaving." *Textile Museum Journal*, vol. 3, no. 2:3-19.

Dwyer, Jane Powell
1971 "Chronology and Iconography of Late Paracas and Early Nasca Textile Designs." Ph.D. dissertation, Anthropology, University of California, Berkeley.

Easby, Elizabeth
1965-66 "Conservation of a Unique Peruvian Fabric." *The Brooklyn Musuem Annual*, vol. 7:65-73.

King, Mary Elizabeth
1965 "Textiles and Basketry of the Paracas Period, Ica Valley, Peru." Ph.D. dissertation, Anthropology, University of Arizona, Tucson.

Harcourt, Raoul d'
1948 "Un tapis brodé de Paracas, Pérou." *Journal de la Societé des Américanistes*, ns, vol. 37:241-57.

———
1962 *Textiles of Ancient Peru and Their Techniques.* Seattle: University of Washington Press.

Levillier, Jean
1928 *Paracas, A Contribution to the Study of Pre-Incaic Textiles in Ancient Peru.* Paris: Libreria Hispano-Americana.

Menzel, Dorothy; Rowe, John H.; Dawson, Lawrence E.
1964 "The Paracas Pottery of Ica." *University of California Publications in American Archaeology and Ethnology*, vol. 50: Berkeley and Los Angeles.

Lothrop, Samuel K.
1964 *Treasures of Ancient America.* Geneva: Skira.

O'Neale, Lila M.
1934 "Peruvian Needleknitting." *American Anthropologist*, vol. 36, no. 3:405-30.

———
1937 "Archaeological Explorations in Peru, Part III. Textiles of the Early Nazca Period." *Field Museum of Natural History, Anthropology, Memoirs*, vol. 2, no. 3:121-208.

——— and Kroeber, A.L.
1930 "Textile Periods in Ancient Peru." *University of California Publications in American Archaeology and Ethnology*, vol. 28, no. 2:23-56.

Proulx, Donald A.
1968 "Local Differences and Time Differences in Nasca Pottery." *University of California Publications in Anthropology*, vol. 5.

Rowe, John H.
1967 "An Interpretation of Radiocarbon Measurements in Archaeological Samples from Peru." In *Peruvian Archaeology: Selected Readings*, eds. John H. Rowe and Dorothy Menzel, pp. 16-30. Palo Alto: Peek Publications.

Sawyer, Alan R.
1968 *Mastercraftsmen of Ancient Peru.* New York: Solomon R. Guggenheim Museum.

Tello, Julio C.
1959 *Paracas. Primera Parte.* Publicación del Proyecto 8b del Programa 1941-42 de The Institute of Andean Research de New York. Lima: Empresa Gráfica T. Scheuch S.A.

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